

We claim:

1. A cosmetic or pharmaceutical composition comprising

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A) at least one water-soluble or water-dispersible copolymer obtainable by free-radical copolymerization of

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a) 5 to 90% by weight, based on the total weight of components a) to d), of acrylamide and/or methacrylamide,

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b) 0 to 85% by weight, based on the total weight of components a) to d), of at least one α,β -ethylenically unsaturated amide-containing compound of the formula I

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where

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R^1 is a group of the formula $\text{CH}_2=\text{CR}^4-$ where $\text{R}^4 = \text{H}$ or C_1-C_4 -alkyl, and R^2 and R^3 , independently of one another, are each H, alkyl, cycloalkyl, heterocycloalkyl, aryl or hetaryl, with the proviso that one of the radicals R^2 and R^3 is different from H, or R^2 and R^3 together with the nitrogen atom to which they are bonded are a five- to eight-membered heterocycle,

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or R^2 is a group of the formula $\text{CH}_2=\text{CR}^4-$ and R^1 and R^3 , independently of one another, are each H, alkyl, cycloalkyl, heterocycloalkyl, aryl or hetaryl, or R^1 and R^3 together with the amide group to which they are bonded are a lactam with 5 to 8 ring atoms,

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c) 0 to 40% by weight, based on the total weight of components a) to d), of at least one unsaturated water-soluble compound which is different from components a) and b) and copolymerizable therewith,

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where the proportion by weight of the sum of components b) and c) is at least 5% by weight,

optionally in the presence of up to 25% by weight, based on the total weight of components a) to d), of at least one water-soluble component d), which is chosen from

- 5 d1) polyether-containing compounds,
- d2) polymers which have at least 50% by weight repeat units derived from vinyl alcohol,
- 10 d3) starch and starch derivatives,
- and mixtures thereof, and
- B) at least one cosmetically acceptable carrier.
- 15 2. A composition as claimed in claim 1, where component b) comprises at least one compound chosen from N-vinyllactams, N-vinylamides of saturated monocarboxylic acids, N-alkyl- and N,N-dialkylamides of α,β -ethylenically unsaturated
- 20 monocarboxylic acids and mixtures thereof.
3. A composition as claimed in either of the preceding claims, where component c) comprises at least one compound chosen from esters of α,β -ethylenically unsaturated mono- and
- 25 dicarboxylic acids with aminoalcohols, their N-alkyl- and N,N-dialkyl derivatives; esters of vinyl alcohol with monocarboxylic acids; vinyl- and allyl-substituted heteroaromatic compounds; amides of α,β -ethylenically unsaturated mono- and dicarboxylic acids with diamines which
- 30 have a tertiary and a primary or secondary amino group; polyether acrylates and mixtures thereof.
4. A composition as claimed in any of the preceding claims, where component B) is chosen from
- 35 i) water,
- ii) water-miscible organic solvents, preferably C_1 - C_4 -alkanols,
- 40 iii) oils, fats, waxes,
- iv) esters of C_6 - C_{30} -monocarboxylic acids with mono-, di- or trihydric alcohols different from iii),
- 45 v) saturated acyclic and cyclic hydrocarbons,

vi) fatty acids,

vii) fatty alcohols

5 and mixtures thereof.

5. A composition as claimed in any of the preceding claims, further comprising at least one constituent different from copolymer A which is chosen from cosmetically active
10 ingredients, emulsifiers, surfactants, preservatives, perfume oils, thickeners, hair polymers, hair and skin conditioners, graft polymers, water-soluble or dispersible
silicone-containing polymers, light protection agents, bleaching agents, gel formers, care agents, colorants,
15 tinting agents, tanning agents, dyes, pigments, consistency-imparting agents, humectants, refatting agents, collagen, protein hydrolysates, lipids, antioxidants, antifoams, antistats, emollients and softeners.
- 20 6. A composition as claimed in any of the preceding claims in the form of a gel, foam, spray, an ointment, cream, emulsion, suspension, lotion, milk or paste.
7. A copolymer A) as defined in any of claims 1 to 3.
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8. A copolymer A) as claimed in claim 7 obtainable by free-radical copolymerization of
- a) 10 to 45% by weight, based on the total weight of
30 components a) to d), of methacrylamide,
- b) 60 to 90% by weight, based on the total weight of components a) to d), of vinylpyrrolidone and/or vinylcaprolactam,
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- c) 0 to 25% by weight, based on the total weight of components a) to d), of at least one unsaturated water-soluble compound different from a) and b) and copolymerizable therewith,
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- optionally in the presence of up to 20% by weight, based on the total weight of components a) to d), of polymers d2) and/or starch and starch derivatives d3).
- 45 9. A copolymer A) as claimed in claim 8, obtainable by free-radical polymerization of

- a) 20 to 40% by weight of methacrylamide,
- b) 40 to 70% by weight of vinylpyrrolidone,
- 5 in the presence of from 1 to 20% by weight of polymers d2) and/or starch and starch derivatives d3).
10. A copolymer A) as claimed in claim 8, obtainable by free-radical polymerization of
- 10 a) 30 to 40% by weight of methacrylamide,
- b) 20 to 60% by weight of vinylpyrrolidone and 1 to 20% by weight of vinylcaprolactam.
- 15 11. A copolymer A) as claimed in claim 7, obtainable by free-radical polymerization of
- a) 20 to 40% by weight of methacrylamide,
- 20 b) 40 to 70% by weight of vinylpyrrolidone and
- c) 1 to 20% by weight of at least one water-soluble compound different from a) and b) and copolymerizable therewith.
- 25 12. A copolymer A) as claimed in claim 7, obtainable by free-radical copolymerization of
- a) 5 to 50% by weight, based on the total weight of
- 30 components a) to d), of methacrylamide,
- b) 40 to 85% by weight, based on the total weight of components a) to d), of at least one compound chosen from vinylpyrrolidone, vinylcaprolactam,
- 35 N,N-dimethylacrylamide and mixtures thereof,
- c) 0.2 to 20% by weight, based on the total weight of components a) to d), of at least one unsaturated water-soluble compound different from a) and b) and
- 40 copolymerizable therewith which is chosen from vinylimidazole and derivatives thereof, polyether acrylates and mixtures thereof,
- 45 optionally in the presence of up to 10% by weight, based on the total weight of components a) to d), of polymers d2) which are derived from vinyl alcohol, and optionally in the

presence of up to 1% by weight, based on the total weight of components a) to d), of at least one crosslinker.

13. A copolymer A as claimed in claim 12, obtainable by
5 free-radical polymerization of
- a) 7 to 45% by weight of methacrylamide,
 - 10 b) 50 to 80% by weight of at least one compound chosen from vinylpyrrolidone, vinylcaprolactam, N,N-dimethylacrylamide and mixtures thereof,
 - 15 c) 0.3 to 10% by weight of at least one compound chosen from vinylimidazole and derivatives thereof, polyether acrylates and mixtures thereof,
- in the presence of from 0.1 to 10% by weight of polymers d2) which are derived from vinyl alcohol.
- 20 14. A copolymer A) as claimed in claim 12, obtainable by free-radical polymerization of
- a) 10 to 45% by weight of methacrylamide,
 - 25 b) 50 to 80% by weight of vinylpyrrolidone and vinylcaprolactam and
 - 30 c) 0.3 to 10% by weight of vinylimidazole and/or a derivative thereof.
15. A copolymer A) as claimed in claim 12, obtainable by
35 free-radical polymerization of
- a) 10 to 45% by weight of methacrylamide,
 - b) 50 to 80% by weight of vinylpyrrolidone and
 - c) 0.5 to 5% by weight of vinylimidazole.
- 40 16. A process for the preparation of a copolymer A, as defined in any of claims 1 to 3 and 7 to 14, by free-radical polymerization of the monomers a) with at least one further monomer chosen from the monomers b) and c), optionally in the presence of up to 25% by weight, based on the total weight of
45 components a) to b), of a water-soluble component d), wherein the polymerization is carried out in an aqueous solvent.

17. The process as claimed in claim 16, wherein the polymerization is carried out at a pH in the range from 6 to 8.
- 5 18. The process as claimed in claim 17, wherein the polymerization is carried out at a pH in the range from 6.4 to 7.4.
- 10 19. The use of a copolymer A) as defined in any of claims 1 to 3 and 7 to 14 in skin-cleansing compositions, compositions for the care and protection of the skin, nail care compositions, preparations for decorative cosmetics and hair-treatment compositions.
- 15 20. The use as claimed in claim 19 in hair-treatment compositions as setting agents and/or as conditioners.
- 20 21. The use as claimed in claim 20, where the composition is in the form of a hair gel, shampoo, setting foam, hair tonic, hairspray or hair foam.
- 25 22. The use of a copolymer A) as defined in any of claims 1 to 3 and 7 to 14, as an auxiliary in pharmacy, preferably as or in (a) coating(s) for solid medicaments and as or in (a) coating(s) for the textile, paper, printing and leather industry.
- 30 23. The use of a water-soluble copolymer A), as defined in any of claims 1 to 3 and 7 to 14, as graft base, polymer emulsifier or protective colloid.

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